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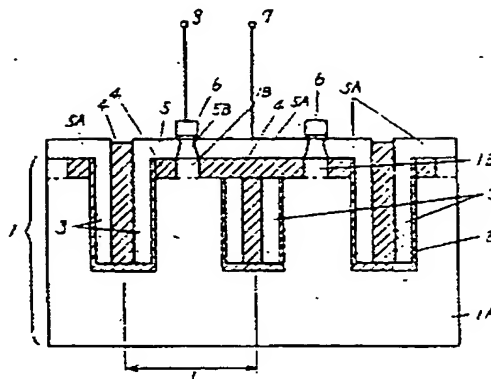
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TITLE : SEMICONDUCTOR DEVICE



ABSTRACT : PURPOSE: To realize large scale integration and improved performance of a semiconductor device by a method wherein polycrystalline Si which fills trenches formed in an Si substrate is used as storage capacitor electrodes and SOI-Si layers which are formed with apertures on the substrate surrounded by the capacitor electrodes as seeds are recrystallized to form switching transistors.

CONSTITUTION: Trenches which are formed in an Si substrate 1 composed of a P⁺type Si substrate 1A and a P-type Si epitaxial layer are filled with polycrystalline Si 3 with insulating films 2 and 4 there between. SOI (Silicon on Insulator) recrystallized Si layers 5 are formed with the parts 1B of the Si substrate 1 as seeds and the SOI-Si layers 5B directly above the parts 1B are employed as channel regions of switching transistors. Moreover, a part of one of N⁺type regions 5A of the source and drain of the switching transistor and a part of a storage capacitor electrode 3 are in direct contact with each other and the other N⁺type region of the source or drain is made to be common with the source or drain of one of the adjoining switching transistors to form a bit line 7. With this constitution, a DRAM or the like with high integrity and high performance can be obtained.

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